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## Outpatient Care Utilization among Elderly in South Sumatra Based on National Social-Economic Survey Data

### *Utilisasi Rawat Jalan pada Lanjut Usia di Sumatera Selatan Berdasarkan Data Survey Sosial Ekonomi Nasional*

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#### ABSTRACT

Implementation of National Health Insurance is thought to be the cause of increasing number of visits to health facilities, especially in elderly people who tend to be in sick. This study aims to analyze the outpatient utilization by elderly in South Sumatra region. Study design was cross-sectional. Samples was elderly in South Sumatra (n = 2,833 people). Study done on 2016, using data from *Survei Sosial Ekonomi Nasional (Susenas)* at 2015. Data analysis used chi-square test and multiple logistic regression. Based on the study known that outpatient utilization of elderly in all health facilities during the past month amounted to 29.2%. Providers selected when elderly needed of outpatient treatment, most often visited to the doctor's practice/midwife's practice (46.2%), and puskesmas (24.2%). Elderly who has private health insurance have a tendency was 1.9 times greater (OR=1.9) to utilize outpatient compared to elderly who do not have insurance. Its concluded that variables associated with outpatient care utilization are: health insurance membership (OR=1.9) and work activity (OR=1.5). It is recommended for elderly to remain active in their activities so that they can realize the healthy and active aging and reduce the sick visits to health facilities.

#### ABSTRAK

Implementasi Jaminan Kesehatan Nasional diduga menjadi penyebab meningkatnya angka kunjungan ke fasilitas kesehatan, terutama pada penduduk lansia yang cenderung dalam kondisi sakit. Tujuan penelitian ini untuk menganalisis utilisasi pelayanan rawat jalan pada lansia di Sumatera Selatan. Desain penelitian cross-sectional. Sampel adalah lansia di Sumatera Selatan (n=2.833 orang). Penelitian dilakukan di tahun 2016, menggunakan data sekunder berdasarkan hasil Survei Sosial Ekonomi Nasional tahun 2015. Analisis data menggunakan uji chi square dan regresi logistik ganda. Berdasarkan hasil penelitian diketahui utilisasi rawat jalan selama sebulan terakhir pada lansia sebesar 29,2% pada semua fasilitas kesehatan. Pemilihan provider ketika lansia membutuhkan rawat jalan paling banyak berobat ke praktek dokter/bidan (46,2%), dan puskesmas (24,2%). Lansia yang memiliki jaminan kesehatan privat memiliki kecenderungan sebesar 1,9 kali lebih besar (OR=1,9) untuk memanfaatkan rawat jalan dibanding lansia yang tidak memiliki jaminan kesehatan. Disimpulkan bahwa variabel yang berhubungan dengan utilisasi pelayanan rawat jalan adalah kepemilikan jaminan kesehatan (OR=1,9), dan aktivitas bekerja (OR=1,5). Disarankan pada lansia agar tetap aktif beraktivitas sehingga dapat mewujudkan lansia aktif dan sehat, dan rendahnya kunjungan sakit ke fasilitas kesehatan.

## INTRODUCTION

Increasing life expectancy as an indicator of the success of national development achievement, especially in the health sector, can cause health problems for the elderly if they do not get good health services. Behind this success there are challenges that must be watched out, namely in the future Indonesia will face the triple burden of disease, namely an increase in the birth rate and disease burden (infectious and non-communicable), an increase in the dependency burden rate of the population of the productive age group (age 15-64 years) towards the unproductive age group (aged < 15 years and > 65 years), which reflects the magnitude of the economic burden that must be borne.<sup>1</sup>

Health insurance is the first social security that humans need. Since birth, we need health insurance as well as when we grow up to the end of life. Health insurance is needed throughout human life, so if this aspect of financing is not guaranteed, it can have an impact on poor health status.<sup>2</sup> The high cost of medical treatment in Indonesia can cause someone who is sick to fall into poverty and even die because there is no money for medical treatment. It is hoped that the existence of health insurance or insurance can help overcome the economic inability that hinders the population from obtaining health services.<sup>3</sup> This is one of the reasons for implementing the *Sistem Jaminan Sosial Nasional (SJSN)* in Indonesia by implementing the *Jaminan Kesehatan Nasional (JKN)*.

At the beginning of the implementation of JKN, there was an increasing trend in participant

registration, so it is predicted that the utilization rate of health services in several hospitals will increase. There are some concerns that the increase the utilization of JKN health services only relies on a group of people who were already sick before, or on the elderly who are prone to illness, or only used by urban people who are close to health facilities. So that this condition can cause the absorption of JKN funds to be uneven for all participants in the territory of Indonesia, and there will be no cross subsidies. In addition, from several studies it was reported that the use of health insurance in several countries is dominated by the elderly.<sup>4-7</sup> Therefore, it is necessary to study the utilization, especially for the elderly population. This is done in order to improve the health status of the elderly. In addition, information on utilization patterns is a critical factor in being able to properly manage health insurance.

Data from the South Sumatra Health Office in 2015, there were 57.1% of the elderly who received health services.<sup>8</sup> Knowing the pattern of health service utilization, the pattern of health service providers, and the financing of health services enables related parties (in this case the Government and BPJS) to design competitive insurance packages according to the medical needs of participants.<sup>9</sup> Therefore, by understanding about utilization service then allows the more accurate efforts to improve health services in the future.<sup>10</sup> Therefore, the aim of this study was to analyze the pattern of outpatient utilization in all health facilities for the elderly

using data from the *Survei Sosial Ekonomi Nasional (Susenas)* in 2015.

## MATERIAL AND METHOD

The research design was cross-sectional, using data from the *Survei Sosial Ekonomi Nasional (Susenas)* in 2015 published by the *Badan Pusat Statistik (BPS)*.<sup>11</sup> The population is the elderly (aged 60 years and over) in South Sumatra Province, amounting to 540,056 people or about 6.8% of the total population.<sup>12</sup> The research sample followed the data on the number of elderly people in South Sumatra who were studied at the 2015 Susenas as many as 2,833 people. The sample selection technique followed the Susenas which was selected using the two stages stratified sampling method.

The data observed were the characteristics of the elderly (predisposing factors, enabling factors, and need factors) based on the theory of health service utilization.<sup>13</sup> The dependent variable is outpatient utilization, that is, elderly outpatient visits to health services that are counted during the last month at all government-owned and private health facilities (hospitals, health centers, clinic, medical centers and others). This study does not analyze only the elderly who have health complaints on the grounds that the elderly as a vulnerable group should also actively visit health services for healthy visits. The independent variable consists of variables: age, gender, marital status, education, smoking behavior, work activities, household activities, ownership of health insurance, characteristics of domicile area, and health complaints. The work activity variable is

taken from the questionnaire block XI,<sup>11</sup> which is meant here to assess the elderly who are working or not working, while the activity of taking care of the household is intended to see whether the elderly can still do other activities apart from taking care of themselves.

The instrument used was a dataset of Susenas data in the form of an individual dataset (KOR15IND) and a household dataset (KOR15RT).<sup>11</sup> The two datasets were merged using the ID sample for analysis of the variables studied. Data were analyzed bivariate and multivariate using chi square test and multiple logistic regression with 95% Confidence Interval (CI). Data management and analysis steps are carried out in accordance with those in the reference theory.<sup>14,15</sup> Multivariate analysis uses a full model approach, by looking at the p-value, and the OR value to see the association of all variables to outpatient utilization. Presentation of data in tabular form accompanied by narration for interpretation.

## RESULTS

Based on the results of the study, it was found that in all the elderly, there were around 29.2% of the elderly who used outpatient services to all health facilities during the last month. If it is calculated only the elderly who have complaints (have a need), it is known that there are 55.7% of the elderly who use outpatient care (Table 1). Health complaints experienced by the elderly in the last month have become a dominant factor in utilizing outpatient services. Health complaints that are often felt by the elderly include fever, cough,

runny nose, asthma/shortness of breath/fast, diarrhea, recurrent headaches, toothaches and other complaints.

Further data analysis was carried out on the sample group who had health complaints as many 827 people, it was known that 44.3% of the elderly did not take advantage of outpatient care. The reasons for the elderly for not going out for outpatient treatment were quite diverse, the majority stated reasons for self-medicating (57.4%), other reasons, among others, because they felt unnecessary (30.1%), did not have medical expenses (9.3%), there was no cost. transport (0.3%), long service waiting time (0.3%), and other reasons (2.6%).

The location of the elderly's destination when they need outpatient care in detail can be seen in Table 2. The elderly mostly seeks outpatient treatment at the doctor's/midwife's

practice (46.2%), then the most preferred provider is the puskesmas (24.2%). The proportion of providers in the choice of outpatient destination locations between the elderly men and women is almost the same. When viewed based on urban and rural areas, the percentage is much different in each provider. The elderly in urban areas seem to use more public and private hospitals (21.5% and 10.2%) than the elderly in rural areas (7.8% and 3.4%).

Based on Table 2, it is known that there are still around 10.6% of the elderly who seek treatment in addition to health providers. This includes 2.9% of the elderly who seek outpatient treatment to traditional / alternative medicine. It can be seen that female elderly people use more treatment at other facilities (11.9%) than male elderly.

**Table 1. Utilization of Outpatient Services for All Elderly and Elderly has Health Complaints**

Respondent Group	Outpatient Utilization				Total	
	Yes		No		n	%
	n = 827	%	n = 2006	%		
<b>All Elderly</b>	827	29.2	2006	70.8	2833	100
<b>Elderly Have Health Complaints:</b>						
There are complaints	827	55.7	658	44.3	1485	52.4
No complaints	0	0	1348	100	1348	47.6

Source: Secondary data Susenas, 2015

**Table 2. Proportion of Elderly Outpatient Providers by Gender and Type of Region**

Characteristics	Percentage of Outpatient Providers					
	Government Hospital	Private Hospital	Doctor or Midwife Practice	Clinic	Public Health Center	Others
	% = 12.3	% = 5.7	% = 46.2	% = 7.3	% = 24.2	% = 10.6
<b>Gender</b>						
Male	13.1	5.8	45.7	7.2	25.2	9.3
Women	11.6	5.5	46.7	7.3	23.1	11.9
<b>Region Type</b>						
Urban	21.5	10.2	35.3	8.7	24.7	4.0
Rural	7.8	3.4	51.6	6.5	23.9	13.8

Source: Secondary data Susenas, 2015

Based on Table 3, the results of the chi-square analysis, based on the  $p$ -value, show that the variables related to outpatient utilization include: age ( $p$ -value=0.000), marital status ( $p$ =0.010), work activities ( $p$ =0.000), has health complaints ( $p$ =0,000). It can be seen that the increasing age of the elderly, the proportion of outpatient utilization is increasing, mostly in the elderly more than 80 years old (36.8%).

As for the proportion based on their characteristics, the elderly who use outpatient treatment mostly belong to the group: male elderly (30.1%), have other health insurance (private or private) of 42.9%, have smoking behavior in the last month and in the period before the last month (29.9%), not actively working (33.4%), and not actively taking care of the household (30.4%) and in the elderly group who have health complaints (55.7%). Based on the domicile location, it is known that the outpatient utilization of the elderly living in urban areas (29.3%) is almost the same as the outpatient utilization for the elderly in rural areas (29.1%).

However, if we look at the Prevalence Rate (PR), it is known that the PR value that is more than 1 is in the variables: ownership of health insurance (PR=2.1 and 1.2), age (PR=1.6 and 1.3) and working activities (PR=1,5). The PR value is to see the relationship between variables and outpatient utilization variables. The elderly who does not work appear to be 1.5 times more likely

to use outpatient services than the elderly who work. Furthermore, the interpretation of the PR value, the elderly who have other health insurance (private) have a 2.1 greater tendency to take advantage of outpatient services than the elderly who do not have health insurance (PR = 2.1). However, the elderly who have health insurance (JKN or BPJS Kesehatan), have a 1.2 times greater tendency to use outpatient services than the elderly who do not have health insurance (PR = 1,2).

Furthermore, based on the full model multiple logistic regression analysis (Table 4) without including the health complaint variable as the dominant factor in elderly visits to health services. This is because in the previous analysis there was a 0% column in the 2 x 2 table so that the OR value could not be calculated, so it was not included in the multivariate analysis.

Based on Table 4, the results show a statistical relationship that simultaneously on the variables related to outpatient utilization in the elderly in South Sumatra are the health insurance variables owned (OR = 1.9 and 1.2) and work activities (OR = 1.5). Elderly who has other health insurance (private and company or called private) have a tendency of 1.9 times greater for outpatient care than elderly who do not have any health insurance. Furthermore, the elderly who do not work have a tendency of 1.5 times greater for outpatient care than the elderly who work.

**Table 3. Chi-Square Test Results between Elderly Characteristics and Outpatient Utilization**

Variable	Outpatient Utilization		PR	95% CI	p
	Yes	No			
	n = 827 (%)	n = 2006 (%)			
<b>Age (Years)</b>					
≥ 80	91 (36.8)	156 (63.2)	1.58	1.20-2.09	0.000
70 - 79	242 (32.3)	507 (67.7)	1.29	1.08-1.56	
60 - 69	494 (26.9)	1343 (73.1)	1	1	
<b>Gender</b>					
Male	429 (30.1)	998 (69.9)	1.09	0.93-1.28	0.324
Women	398 (28.3)	1008 (71.7)	1	1	
<b>Marital Status</b>					
Married	513 (27.4)	1359 (72.6)	1.13	0.41-3.13	0.010
Dead or alive divorce	309 (32.8)	632 (67.2)	1.47	0.53-4.07	
Single	5 (25)	15 (75)	1	1	
<b>Education</b>					
Did not complete elementary school or did not attend school	430 (29.3)	1038 (70.7)	1.12	0.67-1.89	0.730
Elementary school or equivalent	267 (29.5)	638 (70.5)	1.13	0.67-1.91	
Junior high school or equivalent	45 (25.3)	133 (74.7)	0.92	0.50-1.68	
Senior high school or equivalent	64 (31.4)	140 (68.6)	1.24	0.69-2.22	
College	21 (26.9)	57 (73.1)	1	1	
<b>Domicile Area</b>					
Urban	275 (29.3)	663 (70.7)	1.01	0.85-1.19	0.952
Rural	552 (29.1)	1343 (70.9)	1	1	
<b>Health Insurance</b>					
Other health insurance	9 (42.9)	12 (57.1)	2.12	0.87-5.16	0.128
BPJS health insurance	703 (29.6)	1669 (70.4)	1.19	0.95-1.49	
Do not have	115 (26.1)	325 (73.9)	1	1	
<b>Smoking Behavior</b>					
Smoke	294 (29.9)	689 (70.1)	1.05	0.89-1.25	0.570
Don't smoke or don't know	533 (28.8)	1317 (71.2)	1	1	
<b>Work Activities</b>					
Does not work	450 (33.4)	897 (66.6)	1.47	1.25-1.74	0.000
Work	337 (25.4)	1109 (74.6)	1	1	
<b>Household Activities</b>					
No	415 (30.4)	952 (69.6)	1.11	0.95-1.31	0.201
Yes	412 (28.1)	1054 (71.9)	1	1	
<b>Health Complaints</b>					
Yes	827 (55.7)	658 (44.3)	0.443	0.419-0.460	0.000
No	0 (0)	1348 (100)	1	1	

Source: Secondary data Susenas, 2015

## DISCUSSION

Outpatient utilization in the findings of this study showed that the proportion of outpatient care for all the elderly was 29.2%, whereas if measured only for the elderly who had health complaints (had need) the proportion of outpatient care was 55.7%. These two data can be used as information to see the proportion of outpatient care in each of these elderly groups. Health condition (need factor) is also the reason for the elderly to visit health

facilities or not. This figure is almost the same as the data in 2014 that there were 51.2% of the elderly who were sick and had outpatient treatment.<sup>16</sup>

The results of this study are in line with the results of the 2014 Susenas data which shows that more than 50% of the elderly population experienced health complaints in the last month, both in urban areas (52%) and in rural areas (53%), the proportion of older people who experienced health complaints. An interesting

phenomenon is that there are still many elderly people (59%) who decide to seek treatment themselves to overcome their health complaints.<sup>17</sup> Results of the SMERU survey found that among respondents who faced a disturbed health situation, the majority of them did not take any action (53%).<sup>18</sup> This could be possible due to the constraints of the cost of treatment which is considered expensive, as well as other factors from the elderly's own side. This can also be related to many aspects, such as cultural factors, where perhaps many of our elderly people feel more comfortable if they are treated at home, rather than going to health services.<sup>18</sup>

The findings in this study reveal that the choice of providers when the elderly require outpatient services are more likely to seek treatment at a doctor's or midwife's practice (46.2%), compared to other health facilities, both in urban and rural groups. This is the same

as the behavior of the elderly in Taiwan who mostly choose General Practice when using outpatient services (20.1%), and about 9 visits per person per year.<sup>19</sup>

The results of this study found a relationship between outpatient utilization and health insurance ownership (OR=1.9). This is in line with research in China which states that there is a significant relationship between demand for outpatient services and income, which is partly the result of having insurance.<sup>20,21</sup> Data from the Taiwanese National Health Insurance (NHI) also mentions the high number of visits by elderly participants who have health insurance, especially in outpatient services. Nearly half of the elderly have more than 24 visits per year or about 96.6% of the elderly NHI participants who use outpatient services.<sup>22</sup>

**Table. 4. Full Model Multivariate Analysis of Outpatient Utilization in the Elderly**

Variable	B	SE	p	Exp B	95% CI	
					Lower	Upper
<b>Age</b>						
80 years and over ( <i>ref.</i> 60-69 years old)	0.247	0.155	0.111	1,280	0.945	1,734
70 - 79 years ( <i>ref.</i> 60-69 years)	0.141	0.100	0.159	1,151	0.946	1,400
<b>Gender</b>						
Male ( <i>ref.</i> female gender)	0.251	0.131	0.055	1,286	0.994	1,663
<b>Married Status</b> <i>ref.</i> divorced or single	-0,215	0.102	0.034	0.806	0.661	0.984
<b>Education</b>						
Did not complete elementary school or did not attend school ( <i>ref.</i> higher education)	0.118	0.275	0.669	1,125	0.656	1,929
Elementary school or equivalent ( <i>ref.</i> higher education)	0.186	0.273	0.497	1,204	0.704	2,058
Junior high school or equivalent ( <i>ref.</i> higher education)	-0.076	0.312	0.808	0.927	0.503	1,708
Senior high school or equivalent ( <i>ref.</i> higher education)	0.207	0.300	0.491	1,229	0.683	2,214
<b>Urban Area</b> <i>ref.</i> rural areas	-0.054	0.098	0.581	0.947	0.782	1,147
<b>Health Insurance</b>						
Others ( <i>ref.</i> does not have health insurance)	0.687	0.466	0.140	<b>1,988</b>	0.797	4,957
BPJS ( <i>ref.</i> does not have health insurance)	0.204	0.119	0.087	1,226	0.971	1,548
<b>Smoking Behavior</b> <i>ref.</i> non smoking	0.067	0.117	0.567	1,069	0.851	1,343
<b>Work Activities</b> <i>ref.</i> working	0.398	0.095	0.0001*	<b>1,490</b>	1,235	1,796
<b>Household Activities</b> <i>ref.</i> yes	0.023	0.099	0.816	1,023	0.843	1,243
<b>Intercept</b>	<b>-1,458</b>	<b>0.317</b>	<b>0.0001</b>	<b>0.233</b>		

Source: Secondary data Susenas, 2015

\*Significant at 5% degree of significance

It is known from this study that the proportion of outpatient utilization tends to increase with the increasing age of the elderly. Age factor is stated to be related to outpatient utilization. This is consistent with research in Europe on a sample of 50 years of age and over showing that the peak utilization of health services is at the age of 75-79 years and decreases in people over 85 years of age.<sup>23</sup> In contrast, research in Taiwan shows that the proportion of outpatient utilization among the elderly tends to decrease with increasing age. In the age group 65-69 years 28.7%, age group 75-79 years 20.2% and lower still in the 90-94 years age group, namely 2.3%.<sup>19</sup>

The results of the study using the data base of NHI participants in Taiwan showed that the frequency of 4 to 10 visits to the hospital emergency unit was more in the elderly (12.39%) than other participants (7.92%). The consequence is the cost, elderly participants use more medical expenses, which is an average of around  $3239.5 \pm 4359.3$  NT\$ while non-elderly participants were around  $2778.5 \pm 4120.7$  NT\$.<sup>24</sup> The implication of this can be seen that the burden of health costs on the elderly is greater than that of non elderly people.

Research in Taiwan concluded that the absence of assistance with daily activities (activities of daily living) it is associated with a greater burden of acute care use than other elderly.<sup>25</sup> This shows the need for the role of the Government to take part in providing financial assistance for the elderly to carry out their daily activities, so as to motivate the elderly to

continue doing activities such as doing gymnastics.

Therefore, based on information from the results of this study, it can be an input for phealth care providers as well as for policy makers and we recognize uniqueness and behavior patterns of health service utilization among the elderly population, and consider developing related policies. One of them is by making a program for the elderly to be active in physical activity, this is in line with research in Bantul that at high levels of physical activity (cPR = 29.94; 95% CI = 6.47-138.63) related to the quality of good physical health.<sup>26</sup> In harmony with this, The government is expected to make the health improvement program for the elderly a priority program in development so that healthy and active elderly people can be realized so that the elderly do not become a burden to the family, society and the state.

## CONCLUSION AND RECOMMENDATION

Based on the research results, it can be concluded that the variables related to outpatient utilization in the elderly apart from the presence of health complaints are the variables: ownership of health insurance, and work activities. Elderly who has private health insurance are 1.9 times more likely to use outpatient services than elderly who do not have any health insurance. Likewise, in activities carried out by the elderly, the elderly who no longer carry out work activities have a tendency of 1.5 times greater to take advantage of outpatient care than the elderly who work.



Recommendations for local governments to optimize and allocate funds for the implementation of promotional and preventive efforts to prevent the elderly from getting sick or to prevent serious illness so as to reduce medical costs. These efforts can be carried out through the public health center, for example by increasing exercise activities for the elderly. In addition, it is advisable for the elderly to remain active in activities so that they can create active and healthy elderly people as seen from the low number of sick visits to health facilities.

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